1067-92-2016 **Andrew L Nevai*** (anevai@math.ucf.edu), Department of Mathematics, University of Central Florida, Orlando, FL 32816, and **Edy Soewono** (esoewono@bdg.centrin.net.id), Department of Mathematics, Institut Teknologi Bandung, Bandung, 40132, Indonesia. *A mathematical model for the spatial transmission of dengue in a periodic environment.*

In some parts of the world, dengue is transmitted from human to human through the bites of a female mosquito (*Aedes aegypti*). Strangely, these bites seem to occur only in daytime. Here, we use a system of periodic difference equations to study the dynamics of an epidemic in which hosts (humans) have daytime, but not nighttime, mobility and vectors (mosquitoes) have no mobility. The habitat consists of two patches and each day is divided into four parts: evening, dawn, daytime, and dusk. At dawn some hosts in each patch move to the other patch and at dusk those who survive return home. The basic reproduction rate ($\mathcal{R}_0$) of the disease is obtained and the impact of various kinds of host mobility on the disease-free and endemic equilibrium states are discussed. (Received September 22, 2010)